

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. Apparatus for physiological monitoring of a remote subject including:

5 a base station having a transmission means for transmitting a reference signal; and

a physiological monitoring probe connectable to said subject, said physiological monitoring probe having:

receiver means for receiving said reference

10 signal;

monitoring means for monitoring said subject and generating a condition signal containing information related to a condition of said subject;

15 modulation means for modulating said reference signal to produce a modulated reference signal containing said information contained in said condition signal; and

20 passive retransmission means for passively retransmitting said modulated reference signal to said base station;

wherein said base station has means for receiving said modulated reference signal, and means for demodulating said modulated reference signal to obtain said information related to a condition of said subject so that a condition 25 of said subject can be monitored at said base station.

2. Apparatus as claimed in claim 1, wherein said receiving means and passive retransmission means are a passive radio transponder.

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3. Apparatus as claimed in either claim 1 or 2, wherein said monitoring means includes a physical parameter transducer.

35 4. Apparatus as claimed in either claim 1 or 2, wherein said monitoring means includes a biological electrode.

5. Apparatus as claimed in any one of the preceding claims, wherein said physiological monitoring means includes intermediate signal means for generating an intermediate signal derived by combining said condition signal with a fixed or varying frequency signal before modulating said reference signal.

6. Apparatus as claimed in claim 5, wherein said intermediate signal means is operable to convert analog and/or digital signals from the monitoring means to an intermediate signal which is used to modulate a radio frequency signal received by a passive radio transponder, so that the transponder automatically retransmits a modulated signal which contains information relating to the condition of the subject.

7. Apparatus as claimed in either claim 5 or 6, wherein fixed or varying frequency signal comprises a plurality of sub-carrier signals.

20 8. Apparatus as claimed in any one of the preceding claims, wherein said base station includes analogue and/or digital outputs for outputting data.

25 9. Apparatus as claimed in any one of the preceding claims, wherein said base station is connectable to a computer network, and operable to receive input and output data via said computer network.

30 10. Apparatus as claimed in any one of the preceding claims, including encryption means so that said apparatus can transmit data in encrypted form.

35 11. Apparatus as claimed in any one of the preceding claims, wherein said modulated reference signal comprises a synchronous or an asynchronous data signal.

12. Apparatus as claimed in any one of the preceding claims, wherein said apparatus is operable to modulate the frequency or phase of the reference signal by a Pseudo-Random Binary Sequence having an instantaneous code that determines the respective instantaneous frequency or phase.

5 13. A method of physiological monitoring of a remote subject including:

10 transmitting a reference signal from a base station to a remote physiological monitoring probe connected to a subject;

15 monitoring said subject and generating a condition signal containing information related to a condition of said subject;

20 modulating said reference signal to produce a modulated reference signal containing said information contained in said condition signal;

25 passively retransmitting said modulated reference signal from said biological monitoring probe to said base station; and

30 demodulating said modulated reference signal to obtain said information related to a condition of said subject so that a condition of said subject can be monitored at said base station.

35 14. A method as claimed in claim 13, including generating an intermediate signal derived by combining said condition signal with a fixed or varying frequency signal before modulating said reference signal.

40 15. A method as claimed in claim 14, wherein fixed or varying frequency signal comprises a plurality of sub-carrier signals.

45 16. A method as claimed in claim 13, including converting analog and/or digital signals from a subject monitoring means to an intermediate signal which is then used to

modulate a radio frequency signal received by a passive radio transponder, whereby the transponder automatically retransmits a modulated signal containing information relating to the condition of the subject.

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17. A method as claimed in any one of claims 13 to 16, including transmitting data from said base station over a computer network, and/or inputting data over a computer network.

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18. A method as claimed in any one of claims 13 to 17, including encrypting data to be output by said base station, and/or encrypting said modulated reference signal.

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19. A method as claimed in any one of claims 13 to 18, including transmitting said modulated reference signal as a synchronous or as an asynchronous data signal.

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20. A method as claimed in any one of claims 13 to 19, including modulating the frequency or phase of the reference signal by a Pseudo-Random Binary Sequence having an instantaneous code that determines the respective instantaneous frequency or phase.

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21. A method as claimed in any one of claims 13 to 20, wherein said method is used to monitor sleep apnoea.